

A_Squared: Perform A²

Calculate A² where A is an 8-bit unsigned variable. The result is placed into 16-bit variable C. The 16-bit result is saved using little endian byte ordering.

C1:C0 = A²

Simulation of the multiplication problem 50². The answer should equal 2,500 (0x09C4).

```

.DSEG
A:  .BYTE 1
C:  .BYTE 2

.CSEG

A_Squared:
→ lds r26,A    ; load
  mul r26,r26
  sts C,r0    ; store least significant byte (little end)
  sts C+1,r1  ; store most significant byte (big end)
  rjmp A_Squared
    
```

Name	Value	Type	Location
A	50 '2'	SRAM Location	0x0100 [
C	0x00 ''	SRAM Location	0x0101 [

Memory		Address: 0x100	
Data	8/16	abc.	
000100	32	00 00 00 00 00 00 00 00 00 00	2.....
00010A	00	00 00 00 00 00 00 00 00 00 00
000114	00	00 00 00 00 00 00 00 00 00 00
00011E	00	00 00 00 00 00 00 00 00 00 00

Figure 1: Start of program with A initialized to 0x32 (50₁₀) by double click on variable A on the Watch and enter “50”

```

.DSEG
A:  .BYTE 1
C:  .BYTE 2

.CSEG

A_Squared:
  lds r26,A    ; load
  mul r26,r26
→ sts C,r0    ; store least significant byte (little end)
  sts C+1,r1  ; store most significant byte (big end)
  rjmp A_Squared
    
```

Name	Value	Type	Location
A	50 '2'	SRAM Location	0x0100 [
C	0xC4 'Ä'	SRAM Location	0x0101 [

Memory		Address: 0x100	
Data	8/16	abc.	
000100	32 C4	00 00 00 00 00 00 00 00 00 00	2Ä.....
00010A	00	00 00 00 00 00 00 00 00 00 00
000114	00	00 00 00 00 00 00 00 00 00 00
00011E	00	00 00 00 00 00 00 00 00 00 00

Figure 2: After performing calculation of A² (by performing command “mul r26, r26”), result of C0 is 0xC4

```

.DSEG
A:  .BYTE 1
C:  .BYTE 2

.CSEG

A_Squared:
  lds r26,A    ; load
  mul r26,r26
  sts C,r0    ; store least significant byte (little end)
  sts C+1,r1  ; store most significant byte (big end)
→ rjmp A_Squared
    
```

Name	Value	Type	Location
A	50 '2'	SRAM Location	0x0100 [
C	0xC4 'Ä'	SRAM Location	0x0101 [

Memory		Address: 0x100	
Data	8/16	abc.	
000100	32 C4 09	00 00 00 00 00 00 00 00 00 00	2Ä.....
00010A	00	00 00 00 00 00 00 00 00 00 00
000114	00	00 00 00 00 00 00 00 00 00 00
00011E	00	00 00 00 00 00 00 00 00 00 00

Figure 3: Result of C1 is 0x09. End of program with the result is 0x09C4(2,500₁₀) containing in C1:C0.